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Appendix B

ESAMS 2.6.2 MODEL DEFICIENCY REPORTS

This appendix contains a listing of MDRs submitted for ESAMS 2.6.2 and their subsequent resolution by the CCB.

ESAMS 2.6.2 MDR Summary

MDR	Description	Implications for Use	Date Reviewed	Decision
1	Alternative Euler angles are not supported for the SA-10 and -11 simulations.	Causes unacceptable missile flight behavior.	4/22/94	Approved
2	Missile seeker Doppler lockon is attempted before the seeker is initialized.	Will cause divide by zero in subroutine LOKDTB.	4/22/94	Approved
3	Divide by zero occurs in the multipath calculation when target is in the same facet as the site	May cause model to abort or yield erroneous results when using multipath.	4/22/94	Approved
4	Update the version date in the code.	Updates configuration status.	4/22/94	Approved
5	The definitions of PHIT and PSIT in the prologues of 34 subroutines are transposed.	May cause user confusion.	7/14/94	Defer 263
6	Rename dummy argument, IANT, in subroutines BEMSVL, BEMTVL, and BEMFVL.	May cause user confusion.	7/14/94	Defer 263
7	Variable ANTSEN in common block ECMD is documented incorrectly.	May cause user confusion.	7/14/94	Defer 263
8	Correct discussion of two-dimensional table look-up in User's Manual.	May cause user confusion.	7/14/94	Defer 263
9	Ring radii are not correctly calculated when using circular site setup option.	Will yield incorrect site array when using circular site setup.	7/14/94	Approved
10	SA-5 radar performance does not reflect current intelligence.	Will cause simulation to terminate early.	7/14/94	Pending
11	Deterministic mode does not seem to work.	May preclude the option of disabling noise sources.	7/14/94	Pending
12	Update the version date in the code.	Update configuration status.	7/14/94	Approved
13	The same RDRD variable, FBWIF2 is used for both the noise and Doppler bandwidths.	Will result in significant underestimation of thermal noise for Doppler systems.	7/14/94	Pending
14	ESAMS doesn't model pulse integration gain.	Requires recalibration of other radar variables in order to match detection performance reported in intelligence sources.	7/14/94	Pending
15	Error in acquisition logic that precludes acquisition when criteria are met.	May erroneously preclude or delay target acquisition.	7/14/94	Pending
16	The variable ITRACK is erroneously initialized in subroutine TWSEXC.	Will permit radar lockon at lower thresholds then intended for TWS systems.	7/14/94	Pending

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ESAMS 2.6.2 MDR Summary

MDR	Description	Implications for Use	Date Reviewed	Decision
17	Time of lost track not properly set and prevents reacquisition logic from being executed.	Semi-active missile engagements may end prematurely.	7/14/94	Pending
18	SA-4 range tracking filter not correctly modeled.	Prevents target tracking and engagement with the SA-4 simulation.	7/14/94	Pending
19	Error in CFAR sampling for the SA-11.	May result in erroneous acquisition ranges.	7/14/94	Pending
20	Missing arguments in subroutine AFMRCF.	Will cause errors when using the far-field RCS option (IRCSTY=0) in the advanced fuze model.	7/14/94	Pending
21	Undefined variables OLDTIM and OLDRCS in subroutine AFMRCF which are also missing in subroutine call to TGTRCS.	Will cause errors when using the advanced fuze model.	7/14/94	Pending
22	Incorrect re-initialization when running multiple shots or multiple sites.	Causes early fuzing in the advanced fuze model.	7/14/94	Pending
23	Undefined variable RCSTYP should be given explicit default.	Improves code quality.	7/14/94	Pending
24	Clutter integration length (RELEN) is too large.	Causes overestimation of clutter power.	7/14/94	Pending
25	Headers in some data files are missing.	May cause user confusion.	10/11/94	Pending
26	Subroutine FACIN always sets IFACTI flag, leading in some cases to misleading output message.	May cause user confusion.	10/11/94	Pending
27	Termination code for "max tracking rate exceeded" is incorrectly printed.	May cause user confusion.	10/11/94	Pending
28	Error in check for specular multipath.	May cause errors when using multipath.	10/11/94	Pending
29	Target flight path is not correctly updated in subroutine MULTIP.	May cause errors when using multipath.	10/11/94	Pending
30	Multipath signals in native multipath algorithms are erroneously dependent on facet size.	May cause errors when using multipath.	10/11/94	Pending
31	Natural log function is used in subroutine DRVE and IREXE where common logs should be used.	May cause when running IR SAMs.	10/11/94	Pending
32	The CFAR mask in subroutine INIDET seems to be incorrectly initialized.	The CFAR threshold may be incorrectly computed resulting in incorrect acquisition ranges.	10/11/94	Pending
33	Acquisition time, ACQTIM, is incorrectly computed in subroutine ACQTRK.	May result in acquisition errors if the GRAM time-step (GDT) is significantly different than the general time-step (DT).	10/11/94	Pending
34	Target position is not correctly re-initialized in certain cases when running multiple sites.	Will cause undesired results when running multiple sites.	10/11/94	Pending
35	Compilation error in subroutine AM4C on SGI computers.	Prevents successful compilation and linking of ESAMS executable.	10/11/94	Pending
36	Infinite loop encountered in subroutine DRVGA when compiled on SGI computers.	Precludes simulation of the SA-2 on SGI computers.	10/11/94	Pending

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ESAMS 2.6.2 MDR Summary

MDR	Description	Implications for Use	Date Reviewed	Decision
37	UAO trajectories of some missile cause premature termination because of increasing missile to target range.	Precludes simulation of UAO missile trajectories with certain target geometries.	10/11/94	Pending
38	The number of GRAM update intervals needed between track establishment and missile launch (NCNEED) is not correctly calculated.	May result in timing errors and inaccurate track filter updates.	10/11/94	Pending
39	Change dimension statement for array POSSBL in subroutine PREPCH to indicate variable dimension.	No effect on code performance but improves software quality.	10/11/94	Pending
40	Close statement for unit, LUNIT, needed in subroutine RDSMF1 when compiled on SGI computers.	Prevents Fortran unit from being closed correctly and rewound.	10/11/94	Pending
41	Sin and Cos functions in subroutine RESLV2 yield NaN (not a number) when compiled on SGI computers.	Will cause errors when running two-channel monopulse systems on SGI computers.	10/11/94	Pending
42	Incorrect termination code obtained when running SA-12.	May cause user confusion.	10/11/94	Pending
43	The array WAVFM is incorrectly dimensioned in the data files rdrd11, rdrd12, and rdrdn7.	May cause errors in the Doppler reacquisition logic for those systems affected.	10/11/94	Pending
44	Pulse width of SA-6 missile seeker is too large and prevents seeker lockon.	SA-6 simulation may terminate early for some target signatures and engagement ranges.	10/11/94	Pending
45	Missile time-to-go (TTGO) is incorrectly computed in subroutine TDDPLY.	May affect modeling of towed decoy effectiveness.	10/11/94	Pending
46	Erratic SA-6 missile performance observed when running on a DEC alpha.	SA-6 simulation results may be in error.	10/11/94	Pending
47	Numerous limitations in ECM/ECCM modeling, fuzing, radar and missile characterizations, and guidance.	Simulation of threat effectiveness, particularly ECM effectiveness, is not credible for several systems.	10/11/94	Pending
48	Recommend integration of ASC/XRE modifications (2.6.2+) into baseline.	Will improve many aspects of threat effectiveness modeling, particularly, ECM/ECCM effectiveness modeling.	10/11/94	Pending
49	Numerous limitations in both versions 2.6.2 and 2.6.2+ such as fuzing and vulnerability.	Effects many aspects of threat modeling, particularly endgame modeling.	10/11/94	Pending

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